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Total Number of Pages in This Submission

22

Application Number	10/696,418
Filing Date	10/29/2003
First Named Inventor	William P. Fell
Art Unit	3617
Examiner Name	S. Avila
Attorney Docket Number	

ENCLOSURES (Check all that apply)

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BEFORE THE BOARD OF PATENT APPEALS**

In Re Application of: William P. Fell
Serial Number: 10/696,418
Filed: October 29, 2003
For: Jet Powered Steering System For Small Boat Outboard Motors

Art Unit: 3617
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Appeal Brief

On April 20, 2005, appellant appealed from the final rejections of claims 9-15 and 19 of the above captioned application. What follows is appellant's appeal brief as required by 37 CFR 1.192(a) and (c) and 37 CFR 41.37.

Statement Identifying The Real Party In Interest

The real parties in interest in this appeal are William P. Fell and William P. O'Hara, the co-inventors, the first of which is named as appellant in the caption of the brief.

Statement Identifying Other Appeals Related To This Appeal

There are no other appeals or interferences known to the appellant that will directly affect or be affected directly by the outcome of this appeal.

Status of the Claims

Claims 9-27 are pending in the application. Claims 1 through- had been canceled in a previous amendment. Claims 9-15 and 19 stand rejected. Claims 16-18 and 20 are objected to and claims 21-27 are allowed. A complete list of the claims on appeal is found in Appendix A.

The Appeal Brief of William P. Fell et al.
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Status of amendments

No amendments are pending at this time.

Summary of Claimed Subject Matter

This summary is a digest of the main specification, extracted from pages 3 through 10 of the specification. Reference is also made to the drawing figures. This summary is a concise explanation of the subject matter found in each independent claim, including references to any "means plus function" clauses.

The invention is a directional nozzle for the jet output that is attached to a control cable system. This cable causes the directional nozzle to turn, which causes the trust of the jet output to turn the boat. Thus, the boat can be steered without having to turn the entire motor. Two different mechanisms are disclosed that enable the steering. The first is a tiller system that operates much like the traditional tiller on an outboard motor. However, unlike those tillers, this tiller operates the directional nozzle and does not turn the entire motor. The second mechanism is a bicycle handlebar system that is placed forward of the motor, much like a traditional wheel. The handlebar system, when combined with the new steering system, produces faster steering response without the effort required to turn the wheel to make large sweeping turns.

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The directional nozzle is designed to attach to an existing jet outboard motor using an adapter ring.

The elements of invention as claimed can be found in claim 9, and are as follows:

A steering system for a boat having an outboard motor with a jet drive output attached to a lower unit comprising:

- a) an adaptor ring, attached to said lower unit surrounding said jet drive output;
- b) a directional nozzle;
- c) a means for pivotably mounting said directional nozzle on said adaptor ring such that said directional nozzle extends backward therefrom; and
- d) a means for pivoting said directional nozzle in a horizontal plane.

These elements are clearly shown in the drawings and described at pages 4-5 of the specification:

Referring now to fig. 1, a detail view of the invention, the jet pump steering (JPS) system is shown. Figure 1 shows a portion of a boat 100 that has a transom 100a on which an outboard motor 101 is mounted. The motor 101 has a jet pump drive 102 (see fig. 2) on its lower unit 101a. The figure shows the JPS system 1 mounted to the lower unit 101a of the motor 101. Control cables 2 and 3 are shown running from the JPS system 1 to the control tiller 30. Dashed lines 2a and 3a are shown running to the optional handlebar steering system 40. Both the control tiller and the handlebar steering system are discussed in greater detail below.

Figure 2 is a side detail view of the JPS system 1. Here, the lower unit 101a of the motor 101 is shown. The jet pump output 102 extends out from the

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back of the lower unit **101a**. The JPS has three main parts. First, there is an adaptor ring **5** (see fig. 4). Next, there is a directional nozzle **15** (see fig. 5) and then there is a reverse thrust cap **20** (see fig. 6). When assembled, these components allow a user to steer a boat quickly and easily. Cables **2** and **3** are shown attaching to the directional nozzle **15** and to the reverse thrust cap **20**. These connections are described in detail below. The cables also are held by bracket **4**, which is secured to the lower unit **101a**.

Figure 3 is a rear view of the JPS system lower portion, in place on a motor. Here, the adaptor ring **5**, the directional nozzle and reverse thrust cap are shown in relation to the lower unit **101a** of the motor. Note the positions of cables **2** and **3** in making connections to the different components. Note also bracket **4**, which is secured to the lower unit **101a**. This bracket holds the cables **2** and **3** in the proper position.

Figure 4 is a perspective detail view of the adapter ring frame of the JPS system. The adaptor ring **5** is used to attach the directional components of the JPS to the lower unit. The adapter ring **5** has two brackets **6** that connect the adaptor ring to the lower unit **101a**. See fig. 2. The adapter ring **5** does not move after it is installed. Rather, it acts as a means for attaching the movable components of the system to the motor. The adapter ring **5** also has a bracket **7** that is used to secure the cable **2** as it feeds back to the directional nozzle **15**. Finally, the adapter ring **5** has two holes **8** that are used to secure the directional nozzle **15**, as discussed below.

Note that all of the elements of the claims on appeal are discussed above and shown in the referenced drawings. The "means for pivotably mounting said directional nozzle on said adaptor ring such that said directional nozzle extends backward therefrom" are discussed on page 5:

Figure 5 is a perspective detail view of the directional nozzle of the JPS system. The directional nozzle **15** has a tapered body to allow for maximum

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efficiency in the jet flow. The directional nozzle **15** has two brackets **16** (see fig. 2) that secure it to the adaptor ring **5** using bolts **17**, or other common fasteners.

One of the means for pivoting said directional nozzle in a horizontal plane is the tiller, described on pages 7-8:

Figure 8 is a perspective detail view of the steering tiller for the new steering system. In this system, the steering tiller **40** has a mounting arm **41**, which is secured to the motor tiller mount **105**. At the front of the mounting arm **41** is the steering control **42**. As discussed below, the steering control **42** is attached to the mounting arm by two brackets **43** located on the mounting arm and two brackets **44** that are attached to the steering control **42**. The brackets **43** and **44** are secured by fasteners **45**. Linked in this way, the steering control is able to move back and forth while the mounting arm **41** remains stationary. Two adjustable stops **46** are attached to the steering control as shown. These stops limit the side-to-side movement of the steering control to a preferred range of 45 degrees of movement on each side of the centerline of the mounting arm. The stops are adjustable so that this angle can be set within a narrow range. A lever **47** is attached to the steering control as shown. Control cable **2** is attached to the lever **47**. Now, as the steering control is moved from side to side, cable **2** causes the directional nozzle **15** to move from side to side.

This brief summary has left out many construction and operating details of this device, as well as other embodiments, which are fully described in the specification.

Grounds of Rejection to Be Reviewed On Appeal

1. The examiner has rejected claims 9-11 under 35 U.S. C. 102(b) as being anticipated by Giacosa.

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2. The examiner has rejected claims 13 and 19 under 35 U.S. C. 103(a) as being unpatentable over Giacosa in view of Buehler.

3. The examiner has rejected claim 12 under 35 U.S. C. 103(a) as being unpatentable over Giacosa in view of Chronic.

4. The examiner has rejected claim 15 under 35 U.S. C. 103(a) as being unpatentable over Giacosa in view of Ito et al.

5. The examiner has rejected claim 14 under 35 U.S. C. 103(a) as being unpatentable over Giacosa in view of Buehler, in further view of Chronic.

6. The examiner has objected to claims 16-18 and 20 as being dependent from a rejected base claim.

Argument

I. The examiner has rejected claims 9-11 under 35 U.S. C. 102(b) as being anticipated by Giacosa.

It is black letter patent law that to show anticipation, every element in the claims must be found in the selected reference. Moreover, it is also black letter patent law that words used in the claims are given their common meaning unless otherwise defined in the specification by the inventor.

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With these principles in mind, a review of the examiner's rational for the §102 rejection of the claims listed above shows that the examiner has not met these standards. The examiner argued for anticipation saying that:

Giacosa discloses the claimed subject matter including a steering system for a boat having an outboard motor with a jet drive output with a directional nozzle 17, pivoting means 22, *an adapter ring P₁, P₂, brackets I₁, I₂* attached to the nozzle and pivotable with respect to the ring, and a curved hood 23 pivotably attached to the nozzle (at 24) and raising and lowering means. (Emphasis added).

A careful reading of Giacosa, however, reveals that P₁ and P₂ are not an adapter ring at all but are "inclined faces, which act as abutment stop surfaces for the deflector nozzle 17 when it is turned through its maximum angle about the axis n the hinges 18, 19." (See Giacosa, col. 3, lines 43-46).

Moreover, what the examiner calls brackets I₁ and I₂, are in reality "subsidiary nozzle outlets I₁ and I₂". As explained in Giacosa: "At the front of the nozzle 17 there are two subsidiary nozzle outlets I₁ and I₂. The axis of these outlets diverge forwardly from the longitudinal axis of the nozzle 17 at an angle of about 45...." (See Giacosa, col. 3, lines 35-38).

Clearly then there is no adaptor ring or brackets to be found in Giacosa. The inclined faces P₁ and P₂ are formed on the diffuser duct 15 and are really nothing more

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than flat spots on the cylindrical diffuser duct 15. The "brackets" I_1 and I_2 are really openings that flare out from the back of the deflector. These openings redirect the flow backwards when the reverse thrust cover is deployed. See the discussion of operation in Giacosa, col. 4, lines 14-59. As discussed by Giacosa in this section, this system is used to make turning in reverse to be the same as when driving a motor vehicle, which is designed to reduce steering errors.

In the examiner's final rejection, he adds in response to argument:

However, the ring containing surfaces P_1 and P_2 adapts the nozzle 17 to the nozzle 15. It is also clearly ring shaped, so that it is an adapter ring. Note Figure 2, for example which clearly shows that the ring containing P_1 and P_2 are [sic] separate from nozzle 15. Also note that adapter ring has no meaning within the art, and must be given its broadest interpretation.

Here, the examiner is simply mistaken. Figure 1 of Giacosa clearly shows the diffuser duct 15, which is a structural part of the motor (part of the lower unit as defined in the appellant's claims). Appellant is not sure how the examiner reasons that P_1 and P_2 are not part of the diffuser duct 15. Note that in figure 1, pin 18 that secures the deflector 17 to the diffuser duct 15 is at the front end of the diffuser duct 15. Figure 2 shows P_1 and P_2 being behind this pin. Moreover, the statement that "the ring containing surfaces P_1 and P_2 adapts the nozzle 17 to the nozzle 15" is equally specious. Although figures 2 and 3 *appear* to show some kind of division between these

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components, the text is perfectly clear. At col. 3, line 16 *et seq.*: "The nozzle 17...is pivoted to the body of the diffuser unit 15 by substantially vertical hinges 18, 19...which ...are carried in corresponding seats in the diffuser duct 15...."

Moreover, In discussing faces P_1 and P_2 at col. 3, line 42 *et seq.* Giacosa states: "Adjacent to the outlet I_1 and I_2 , the body of the diffuser duct 15 is tapered and has inclined faces P_1 and P_2" It is clear, therefore, that the deflector 17 is attached directly to the diffuser duct 15 and the statement that "the ring containing P_1 and P_2 are [sic] separate from nozzle 15" is specious.

Finally, the examiner's assertion that "adapter ring has no meaning within the art, and must be given its broadest interpretation" is again specious. It is black letter patent law that words in claims are to be given their ordinary meaning unless specifically defined by the applicant in other terms. While these terms are interpreted broadly, they cannot be so broadly interpreted as to read claim limitations completely out of a claim. The instant invention has an adapter ring that attaches to the lower unit of a standard jet drive motor. A deflector nozzle then attaches to the adapter ring. An adapter ring is something that adapts one component to another component. It is a "go-between" member between those components. The word "adapt" means to "make fit or suitable". The term "ring" means an annular member. Thus, an "adapter

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ring" means an "annular member" that makes something "fit or suitable". Now, elements P_1 and P_2 and I_1 and I_2 of Giacosa are neither "annular members" nor do they "make fit". There is simply no reasonable way to stretch the meaning of "adaptor ring" to apply to those components. Moreover, the diffuser duct 15 cannot be considered as the adapter ring because the claims require the adapter ring to attach to the lower unit of the motor. The diffuser duct is the lower unit of the motor. Hence, for the rejection to make sense, there must be something else that connects the diffuser duct to the deflector. Since there is nothing else, the §102 rejection must fail.

In view of this, appellants believe that the examiner has not supported a showing under 102(b). Accordingly, appellants believe this rejection has been traversed.

2. The examiner has rejected claims 13 and 19 under 35 U.S. C. 103(a) as being unpatentable over Giacosa in view of Buehler.

Here, the examiner states that Giacosa does not disclose a tiller. Buehler teaches a tiller 35 with speed control 85. The examiner concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the device of Giacosa with a tiller for steering and speed control as taught by Buehler to be more easily operated.

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Appellants agree that the tiller is well known in the art. However, as discussed above, Giacosa fails to teach the remaining parts of the claimed invention, viz., the adapter ring and brackets, as claimed in the application on appeal. Inasmuch as Buehler does not teach or suggest such a structure, appellants believe this rejection has also been traversed.

**3. The examiner has rejected claim 12 under 35 U.S. C. 103(a) as being
unpatentable over Giacosa in view of Chronic.**

For this rejection, the examiner notes that Giacosa does not disclose a cable actuator. The examiner adds that Chronic teaches cables 24, 43. He concludes that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the device of Giacosa with cables to control the nozzle and hood as taught by Chronic for light weight.

Appellants agree that a control cable is known, again, however, Giacosa and Chronic do not have all of the claimed elements. Moreover, these elements are not suggested in either of the references. The only suggestion from them comes from the instant application.

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**4. The examiner has rejected claim 15 under 35 U.S. C. 103(a) as being
unpatentable over Giacosa in view of Ito et al.**

For this claim, the examiner notes that Giacosa does not disclose handlebars. He adds that Ito et al teach handlebars in a steering system. He concludes that would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the steering system of Giacosa with handlebars as taught by Ito et al for ease of steering.

Once again, this rejection fails because the examiner assumes Giacosa includes all of the elements of the claimed invention but for the handlebars. This, of course, has been shown not to be the case. Moreover, there is no suggestion in either Giacosa or Ito to add an adapter ring to the Giacosa device.

**5. The examiner has rejected claim 14 under 35 U.S. C. 103(a) as being
unpatentable over Giacosa in view of Buehler, in further view of Chronic.**

For this claim, the examiner states that Giacosa does not disclose a cable actuator. Chronic teaches cables 24, 43. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the device of Giacosa with cables to control the nozzle and hood as taught by Chronic for light weight.

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Again, as noted above, this rejection also fails because Giacosa, Chronic and Buehler do not teach or suggest all of the elements of the claims, taken singly or together. Therefore, appellants believe that this rejection has also been overcome.

6. The examiner has objected to claims 16-18 and 20 as being dependent from a rejected base claim.

As argued above, appellants believe that the base claims are allowable. Therefore, appellants believe these objections are improper and should be reversed.

Conclusion

Appellants note that in all of these rejections, the Giacosa fails to teach the elements of the adapter ring and brackets. Moreover, Giacosa does not suggest such an arrangement in that Giacosa has a complete system for operation of his motor design. The flat section P_1 and P_2 , and the discharge chutes I_1 and I_2 are designed to work together to allow maneuverability when the Giacosa motor is operated in reverse. There is nothing to suggest the desirability to add an adaptor ring to the duct 15 of Giacosa. Such teaching is found only in the instant application.

In view of the above, the appellant believes that the rejections and objections have been overcome and that the claims are allowable. Appellant prays for a reversal

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of the examiner's rejections and objections and the approval of all claims at an early date.

Respectfully Submitted,



Michael Tavella

Registration No. 29,351

2051 Brigadier Drive

Anchorage, Alaska 99507

(907) 349-2495

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Appendix A

What follows is a current statement of the claims:

9. A steering system for a boat having an outboard motor with a jet drive output attached to a lower unit comprising:
- a) an adaptor ring, attached to said lower unit surrounding said jet drive output;
 - b) a directional nozzle;
 - c) a means for pivotably mounting said directional nozzle on said adaptor ring such that said directional nozzle extends backward therefrom; and
 - d) a means for pivoting said directional nozzle in a horizontal plane.
10. The steering system of claim 9 further comprising a means for reversing the thrust of said jet drive output, operably attached to said directional nozzle.
11. The steering system of claim 10 wherein the means for reversing the thrust of said jet drive output comprises:
- a) a curved hood, pivotably attached to said directional nozzle; and
 - b) a means for raising and lowering said curved hood, attached to said curved hood.
12. The steering system of claim 11 wherein the means for raising and lowering said curved hood comprises:

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a) a cable, having two ends, the first end of the cable being attached to the curved hood; and the second end of said cable being attached to a revering lever, installed in said boat.

13. The steering system of claim 9 wherein the means for pivoting said directional nozzle comprise:

- a) a tiller handle attached to said outboard motor; and
- b) a means for connecting said tiller handle to said directional nozzle.

14. The steering system of claim 13 wherein the means for connecting said tiller handle to said directional nozzle comprise a cable.

15. The steering system of claim 9 wherein the means for pivoting said directional nozzle comprise:

- a) a pair of handlebars;
- b) a means for supporting the pair of handlebars above a deck;
- c) a means for converting rotational motion of the pair of handlebars into reciprocating motion; and
- d) a cable having two ends, one of the two ends of the cable bring attached to said means for converting rotational motion and the other of two ends of the cable being attached to the directional nozzle.

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16. The steering system of claim 15 wherein the means for converting rotational motion of the pair of handlebars into reciprocating motion comprises:

- a) a bracket having a first end and a second end, the first end of said bracket being attached to said shaft and extending horizontally therefrom; and
- b) a means for attaching a cable, attached to the second end of said bracket.

17. The steering system of claim 9 wherein the means for pivotably mounting said directional nozzle on said adaptor ring comprise:

- a) a pair of brackets, attached to said directional nozzle; and
- b) a means for pivotably securing said pair of brackets to said adapter ring.

18. The steering system of claim 13 wherein the tiller handle comprises:

- a) a mounting arm, which is secured to the outboard motor and extends forward therefrom, said mounting arm having an upper bracket and a lower bracket;
- b) a steering control portion, having a handgrip and a steering arm, extending rearward therefrom, said steering arm having an upper bracket and a lower bracket;
- c) a fastener means for pivotably connecting the upper bracket on said mounting arm to the upper bracket of said steering arm;
- d) a fastener means for pivotably connecting the lower bracket on said mounting arm to the lower bracket of said steering arm; and

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e) a cable connector, attached to said steering arm.

19. The steering system of claim 9 wherein the tiller handle further comprises a means for controlling the speed of the outboard motor.

20. The steering system of claim 19 wherein the means for controlling the speed of the outboard motor includes:

a) a twisting hand grip;

b) a shaft attached to said twisting handgrip and extending backwards therefrom;

c) a universal joint attached to said shaft;

d) a second shaft attached to said universal joint and extending backwards therefrom; and

e) a means for connecting said second shaft to a throttle, in operable communication with said outboard motor.

21. A steering system for a boat having an outboard motor with a jet drive output comprising:

a) a directional nozzle, pivotably mounted to said outboard motor such that said directional nozzle surrounds said jet drive output and extends backward therefrom;

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- b) a pair of handlebars;
- c) a shaft, extending downward from said pair of handlebars;
- d) a means for supporting the pair of handlebars above a deck;
- e) a bracket having a first end and a second end, the first end of said bracket being attached to said shaft and extending horizontally therefrom; and
- f) a cable having two ends, one of the two ends of the cable being attached to the second end of said bracket and the other of two ends of the cable being attached to the directional nozzle.

22. The steering system of claim 21 further comprising a means for reversing the thrust of said jet drive output, operably attached to said directional nozzle.

23. The steering system of claim 22 wherein the means for reversing the thrust of said jet drive output comprises:

- a) a curved hood, pivotably attached to said directional nozzle; and
- b) a means for raising and lowering said curved hood, attached to said curved hood.

24. The steering system of claim 23 wherein the means for raising and lowering said curved hood comprises:

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a) a cable, having two ends, the first end of the cable being attached to the curved hood; and the second end of said cable being attached to a revering lever, installed in said boat.

25. A steering system for a boat having an outboard motor with a jet drive output comprising:

a) a directional nozzle, pivotably mounted to said outboard motor such that said directional nozzle surrounds said jet drive output and extends backward therefrom;

b) a tiller handle attached to said outboard motor; and

c) a means for connecting said tiller handle to said directional nozzle

d) wherein said tiller handle includes:

i) a mounting arm, which is secured to the outboard motor and extends forward therefrom, said mounting arm having an upper bracket and a lower bracket;

ii) a steering control portion, having a handgrip and a steering arm, extending rearward therefrom, said steering arm having an upper bracket and a lower bracket;

iii) a fastener means for pivotably connecting the upper bracket on said mounting arm to the upper bracket of said steering arm;

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iv) a fastener means for pivotably connecting the lower bracket on said mounting arm to the lower bracket of said steering arm; and

v) a cable connector, attached to said steering arm.

26. The steering system of claim 25 wherein the tiller handle further comprises a means for controlling the speed of the outboard motor.

27. The steering system of claim 26 wherein the means for controlling the speed of the outboard motor includes:

a) a twisting hand grip;

b) a shaft attached to said twisting handgrip and extending backwards therefrom;

c) a universal joint attached to said shaft;

d) a second shaft attached to said universal joint and extending backwards therefrom; and

e) a means for connecting said second shaft to a throttle, in operable communication with said outboard motor.